Hazardous Waste Management Commission Report

Quarterly Report

April Through June 2010

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

After a jet fuel spill occurred at Rosecrans Air National Guard Base in St. Joseph a vac truck was brought in as a precaution to collect water from a nearby ditch.

Commissioners

Hazardous Waste Management Commissioners

James T. "Jamie" Frakes, Chair
Andrew Bracker, Vice-Chair
Elizabeth Aull
Michael R. Foresman
Charles Adams
Deron Sugg

"The goal of the Hazardous Waste Program is to protect human health and the environment from threats posed by hazardous waste."

For more information

Missouri Department of Natural Resources
Hazardous Waste Program
P.O. Box 176, Jefferson City, MO 65102-0176
www.dnr.mo.gov/env/hwp/index.html
Phone: 573-751-3176
Fax: 573-751-7869

Missouri Department of Natural Resources
Hazardous Waste Program

March 2010 Program Update

Commissioners,

It is an honor and a privilege to have been selected as the next Director of the Hazardous Waste Program - the program in which I first began my career with the department 15 years ago. During my earlier stint with the program, I was fortunate enough to have the opportunity to serve as an environmental specialist in the Budget & Planning, Enforcement and Tanks Sections. Experience I believe will help me immensely as I transition into my new role as the staff director.

In addition to my previous experience with the Hazardous Waste Program, I also have 10 years of experience as a manager with the department, having served in the Air Pollution Control Program, the Energy Center and most recently as the director of the Solid Waste Management Program. This diversity in my background will undoubtedly help me in coordinating and addressing the many issues that impact more than one environmental media and programs within the department.

Even though I come to this position with past knowledge of the program, I still find myself amazed by the number and range of issues the Hazardous Waste Program staff are faced with. It is truly remarkable to see how lasting the impact of this program's decisions and actions are.

In the last three months, there have been changes in the leadership of the Hazardous Waste Program and the department. Through all of this, program staff have remained focused on carrying out their duties and responsibilities. That makes me proud to be their new director and I would like to take the time to thank them for their dedication and patience.

Now to the report. With the end of June comes the end of the state fiscal year. The Budget and Planning Section portion of the report shows a snapshot of the department and hazardous waste program's finalized Fiscal Year 2011 operating budgets. As the section states in its portion of this report, there's no time to sit back and relax – preparations are already well underway for the 2012 fiscal year budget.

The Permits and Compliance and Enforcement Sections discuss some of their inspection-related efforts. An important function of the Hazardous Waste Program is cleaning up hazardous waste sites. An equally important function is working to prevent these clean ups from being needed. Inspections are a critical part of both of these program roles.

The Superfund Section discusses Records of Decisions for five Missouri superfund sites. Records of Decisions are the lasting account, the story, of a particular site. It is also of note that four of the five sites discussed are related to former lead-mining areas. As past quarterly reports have shown, Missouri's lead legacy occupies a large percentage of our time.

The Tanks Section gives some statistics from Fiscal Year 2010. Four-hundred and seventy two tanks were properly closed. That's more than one tank every day – an impressive number. Our Tanks staff work hard every day to remove these potential threats from Missouri's environmental landscape.

I look forward to working with you, the Missouri Hazardous Waste Management Commission, to make Missouri's environment and people safe from the threats posed by hazardous waste. Please do not hesitate to contact me with any questions or concerns you may have.

Thank you,

David J. Lamb
Hazardous Waste Program

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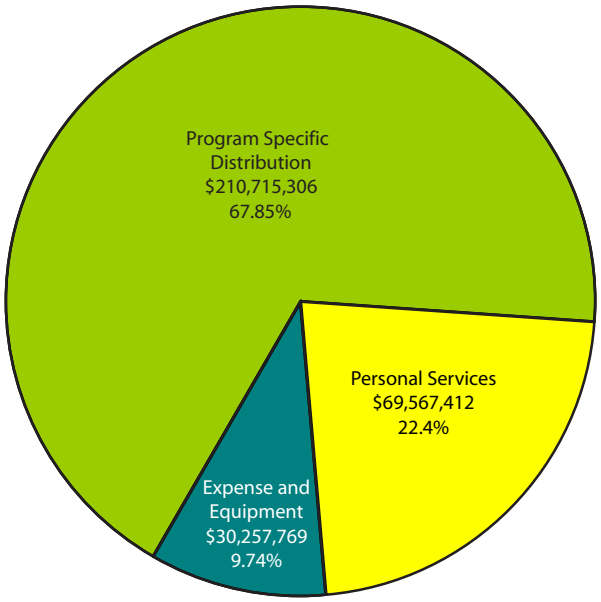
Missouri Department of Natural Resources - Hazardous Waste Program

(Above) Bob Geller, former director of the Hazardous Waste Program, was awarded a Lifetime Achievement Award at the Missouri Waste Control Coalition Conference. Geller served the State of Missouri for more than 30 years in efforts to work with industries, small businesses, communities, the public and others to provide environmental protection throughout Missouri. His work will allow future generations to enjoy the valuable resources of the State of Missouri. Geller had served as the director of the Hazardous Waste Program from August 2005 through summer 2010.

(Right)Shelly Woods, Assistant Attorney General and former counsel to the Hazardous Waste Management Commission, was awarded a Lifetime Achievement Award at the Missouri Waste Control Coalition Conference. Woods started her environmental career in 1985 when she joined the Attorney General Office's Agriculture and Environment Division and represented the Missouri Department of Natural Resources. Woods quickly developed experience in Superfund and is considered a leader and expert on Superfund law in Missouri. She played a key role in some of the biggest environmental settlements in Missouri history.

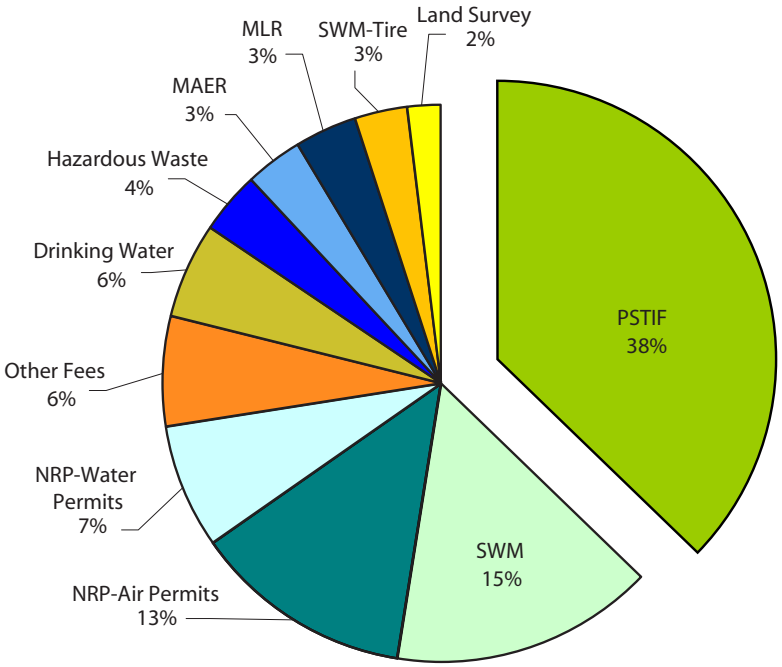
Missouri Department of Natural Resources - Hazardous Waste Program

Department of Natural Resources FY 2011 Truly Agreed and Finally Passed Operating Budget $310,540,487



* Does not include appropriated transfers

Hazardous Waste Program FY 2011 Truly Agreed and Finally Passed Environmental Fee Appropriations $60,135,137



Fund	Amount
PSTIF	$22,391,039
SWM	$ 9,181,180
NRP - Air Permits	$ 7,609,165
NRP - Water Permits	$ 4,489,278
Other Fees	$ 3,718,400
Drinking Water	$ 3,339,186
Hazardous Waste	$ 2,233,777
MAER	$ 2,077,626
MLR	$ 2,005,623
SWM - Tire	$ 1,869,389
Land Survey	$ 1,220,474

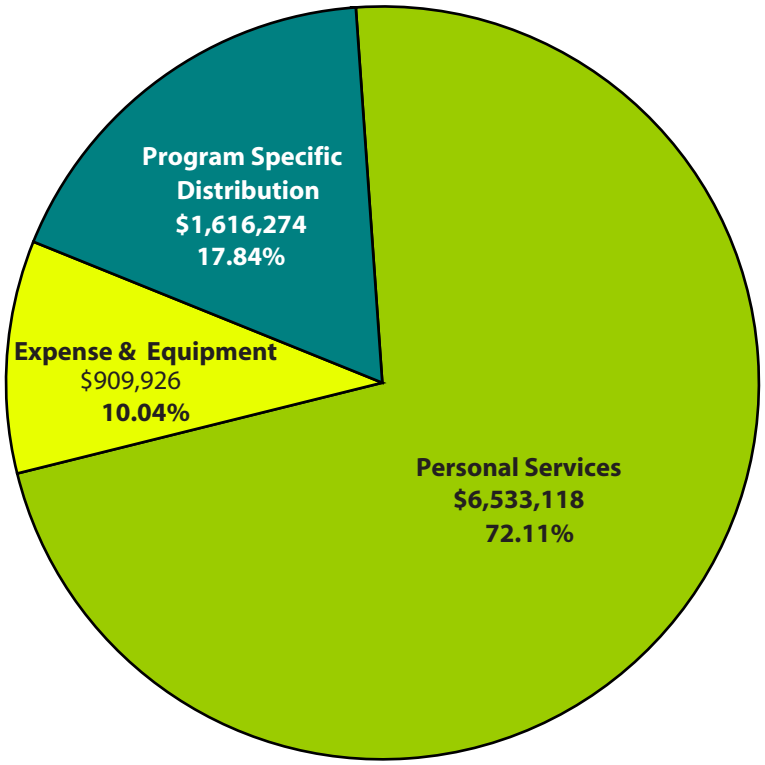
The Budget and Planning Section is responsible for the financial management of the Hazardous Waste Program. It is the section's responsibility to coordinate the program's budget requests each fiscal year. The state is currently operating in Fiscal Year 2011, which began on July 1, 2010 and runs through June 30, 2011. The process to establish the Fiscal Year 2011 budget began in July 2009 when the state budget director issued budget preparation instructions.

The Budget Program within the Division of Administrative Support coordinates the overall Department of Natural Resources' operating, leasing and capital improvements budgets. The department's operating budget is available online at oa.mo.gov/bp/budreqs2011all.htm.

Each state agency is required to submit their completed budget request to the state budget director annually by Oct. 1. The budget requests must be presented to the general assembly within 30 days of the start of the legislative session. This generally occurs in conjunction with the governor's State of the State Address in January.

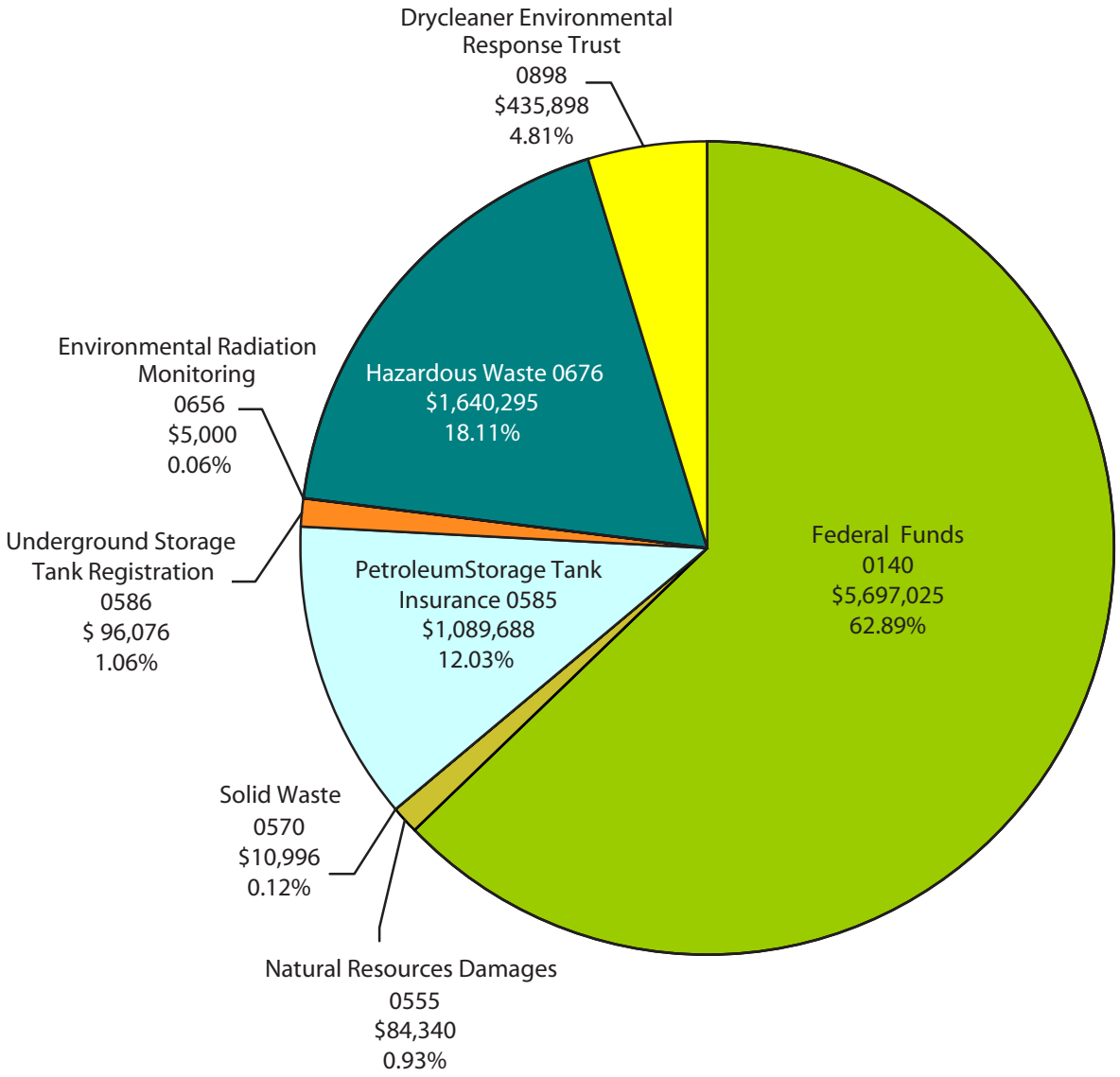
The department's Fiscal Year 2011 operating budget is in House Bill 2006, which was signed by the governor on June 17, 2010. The Budget and Planning Section is currently preparing the Fiscal Year 2012 budget request.

FY 2011 Truly Agreed and Finally Passed Operating Budget (HB6)*
$9,059,318



* Does not include appropriated transfers

FY 2011 Truly Agreed and Finally Passed Operating Budget (HB6)* $9,059,318



* Does not include appropriated transfers.

Missouri Brownfields Conference and Celebration of the 500th Cleanup

The Missouri Department of Natural Resources Brownfields/Voluntary Cleanup Program, or BVCP, held its 6th annual Brownfields Conference in conjunction with the Missouri Waste Control Coalition 38th Annual Environmental Conference. The Brownfields Conference provided a platform to celebrate the positive effects, economically, environmentally and aesthetically, the Brownfields/Voluntary Cleanup Program has had on Missouri and the continued positive effects of the program in the future after successfully completing 500 Brownfield cleanups in Missouri.

Speakers at the Brownfields Conference were from the Brownfields/Voluntary Cleanup Program and different organizations and programs, such as the Environmental Improvement and Energy Resources Authority.

The Brownfields Conference brought together almost 200 participants from seven states. Participants included city and community representatives, consultants and other stakeholders including several state and federal agencies. The Brownfields/Voluntary Cleanup Program display in the exhibit hall provided information about the program and its first 500 cleanups.

The focus of the Brownfields Conference was to provide essential information about the identification, remediation and redevelopment of contaminated properties in Missouri.

Workshop sessions included:

- Information about the various forms of assistance available to cover the costs associated with remediating Brownfield sites.
- A step-by-step approach to successful assessments.
- The importance of planning for long-term costs, use restrictions and resale implications.

A favorite of many participants was the session where community partners shared their experiences with the many aspects of identifying, assessing, cleaning up and redeveloping Brownfield sites. Each of the communities represented praised the Brownfields/Voluntary Cleanup Program.

The conference planners offered scholarships to participants interested in attending yet not capable of providing the financial means to attend. Seventy city and community officials accepted the scholarships to attend the Brownfields Conference. Outreach staff is in the process of contacting several of the attendees regarding their needs for future brownfields assistance.

The annual conference provides a valuable opportunity for staff to share information with consultants, communities and other stakeholders as well as learn about new advances in technology.

Here are some samples of the positive feedback BVCP received at the conference:

- "Thanks very much for the wonderful and informative conference… My co-worker and I came back with a much greater awareness about the programs and opportunities for improvement and awareness here in Boonville. Thank you!"
- "It was a day very well spent! I learned much that I think will benefit the St. James community – we have several redevelopment areas that are a concern to our community."
- "Once again the information was timely, interesting, and hopefully will be useful to the City of Blue Springs in the near future. Again, thanks to DNR for offering this program."
- "This program has value to many companies and this is the one local conference that provides valuable relevant information regarding the Brownfields programs."
- "Congratulations on a stellar job in managing this conference, it was extremely well organized and the experience most worthwhile."

Sites in Brownfields/Voluntary Cleanup

	Active	Completed	Total
April	306	515	821
May	263	562	825
June	257	567	824

New Sites Received

April

QuikTrip 222 (former Georges Imports), Kansas City

Delmar Office Building, St. Louis

May

JRG Hempstead, St. Joseph

Artesian Ice & Cold Storage - Plant A, St. Joseph

Artesian Ice & Cold Storage - Plant B, St. Joseph

Artesian Ice & Cold Storage - Plant C, St. Joseph

Artesian Ice & Cold Storage - Plant D, St. Joseph

June

Frankel, Frank & Co. Building, Kansas City

Sites Closed

April

Hickman Burke Auto (former), St. Louis

May

Cupples Station Building 8 - Ballpark Lofts II, St.Louis

ARKLA Check Meter/ARKLA Southern Trunk

CK/ARKLA Quapaw CK, Saginaw

Ash Grove Lime, Springfield

Ash Grove, Walnut Grove & Will, Springfield

Aurora, MO T.B., Aurora

Billings, MO T.B., Billings

Carl Junction, MO, Carl Junction

Carterville, MO T.B., Carterville

Carthage T.B., Carthage

Carthage T.B. Dyno-Nobel Plant, Carthage

Cassville-Purdy T.B., Pierce City

Chemical Plant, Webb City

Cotton Valley Check Meter, Saginaw

Crane, MO T.B., Billings

East T.B. Keene (aka Campbell St. T.B.), Battlefield

Farmers Chemical, Joplin

Granby T.B., Diamond

Jasper-Lemar, Carthage

Joplin FAG Bearing & Silvercreek, Saginaw

Joplin Rangeline T.B., Joplin

Joplin Rural Brick School, Webb City

Joplin T.B. Lone Elm, Joplin

Joplin Tamko Asphalt, Joplin

Joplin's Royal Heights Add. T.B., Joplin

LeBlanc, Battlefield

Marionville, MO T.B., Marionville

Mt. Vernon, MO, Verona

Noel No., Noel & Springs Valley, Noel

Ozark, MO T.B., Battlefield

Pierce City, MO T.B., Pierce City

Sites Closed

May Continued

- Purcell Check, Webb City
- Republic T.B., Republic
- Saginaw GMV, Saginaw
- Saginaw GMV H.P., Saginaw
- Saginaw Station, Saginaw
- Sarcoxie, MO T.B., Wentworth
- Seneca, MO T.B., Seneca
- Southern Star Central Gas Pipeline Inc. - Southern Area Master OU (billing),
- Southern Trunk Check, Saginaw
- Springfield Check Meter, Saginaw
- Villa Heights Joplin T.B., Joplin
- Webb City West Haven, Webb City
- Webb T.B., Webb City
- West and Weaver (Southeast T.B.), Battlefield
- Mayfair Plaza, Florissant
- Shrewsbury Gas Holder Property, Shrewsbury
- Life Cathedral, St. Louis

June

- Botanical Heights, St. Louis
- Atlantic Express Bus Depot, St. Louis
- Midtown Redevelopment, St. Louis
- Richmond Center, St. Louis
- WRM Tape Building, St. Louis

Drycleaning Environmental Response Trust Fund

The Department of Natural Resources' Drycleaning Environmental Response Trust, or DERT, Fund provides funding for the investigation, assessment and cleanup of releases of chlorinated solvents from dry cleaning facilities. The two main sources of revenue for the fund are the dry cleaning facility annual registration surcharge and the quarterly solvent surcharge.

Registrations

The registration surcharges are due by April 1 of each calendar year for solvent used during the previous calendar year. The solvent surcharges are due 30 days after each quarterly reporting period.

Calendar year 2010	Active Dry Cleaning Facilities	Facilities Paid	Facilities in Compliance
Jan. - March 2010	242	124	51.03%
Apr - June 2010	242	195	195 80.58%

Calendar year 2010	Active Solvent Suppliers	Facilities Paid	Suppliers in Compliance
Jan. - March 2010	10	9	90%
Apr - June 2010	10	2	20%

Cleanup Oversight

Calendar Year 2010	Active	Completed	Total
Jan. - March 2010	20	8	28
Apr. - June 2010	20	8	28

Reimbursement Claims

The applicant may submit a reimbursement claim after all work approved in the work plan is complete and the fund project manager has reviewed and approved the final completion report for that work. The fund applicant is liable for the first $25,000 of corrective action costs incurred.

	Received	Under Review	Paid/Processed
April	0	1	1
May	4	4	3
June	2	1	0

	Received	Under Review	Paid/Processed
April	$0	$13,750	$13,750
May	$10,510	$479,899.55	$79,575.93
June	$60,963.03	$10,762.70	$0

Reimbursement Claims Processed:

Busy Bee Laundry	Rolla	$23,720
Cypress Village Shopping Center	St. Ann	$47,011.54
Tri State Service Co - E. Trafficway Site	Springfield	$22,594.39

Total reimbursements as of June 30, 2010: $1,181,518.28
DERT Fund Balance as of June 30, 2010: $2,030,838.00

Missouri Department of Natural Resources - Hazardous Waste Program
Compliance and Enforcement Section

Inspections and Assistance

Regional Office Employees

- Conducted 155 hazardous waste generator compliance inspections:
  - 27 at large quantity generators.
  - 67 at small quantity generators.
  - 61 at conditionally exempt small quantity generators.
- Issued 43 Letters of Warning and six Notices of Violation requiring actions to correct violations.
- Made eight compliance assistance visits to hazardous waste facilities. Environmental assistance visits are on-site visits with a representative of a facility. The visits are intended to improve the understanding of a permit, registration, certification, report or other similar requirement. Environmental assistance visits provide an opportunity to enhance compliance with environmental regulations.
- Received 86 citizen concerns regarding hazardous waste, 73 of which resulted in a field investigation.

Hazardous Waste Program Compliance and Enforcement staff

- Conducted three inspections of commercial hazardous waste treatment/storage/disposal facilities.
- Conducted two inspections of non-commercial hazardous waste treatment/storage/disposal facilities.
- Conducted one case development inspection at an electronics recycling facility.
- Three hazardous waste enforcement cases were referred to the Attorney General's Office.
- Conducted three e-cycle Missouri inspections.
- Conducted one case development inspection at an e-cycle facility.
- Conducted three case development inspections at hazardous waste facilities.
- On April 6, 2010 the Enforcement and Special Facilities Units presented information about operating household hazardous waste collection events to representatives of Missouri's Solid Waste Management Districts.
- Updated the Pharmaceutical fact sheet to aid hospitals, pharmacies and doctor's office better manage their hazardous waste.
- The Enforcement Unit developed forms and procedures to accept Manufacturer's Recovery Plans from electronic manufacturers under the new Electronic Manufacturers Responsibility Act. The new law and regulations task the department with reviewing manufacturer's plans to recycle electronics to ensure take-back programs are free and reasonably convenient, providing outreach to the public and enforcing the laws and regulations.

Tanks Compliance and Enforcement Unit

- The completion of state Fiscal Year 2010 marked the third successful year of the joint contract inspection agreement between the department and the Petroleum Storage Tank Insurance Fund. These efforts have resulted in Missouri achieving one of the highest leak detection compliance rates in the United States and the highest overall compliance rates in our region.
- In June, members of the Tanks Compliance and Enforcement Unit hosted an Operational Tanks Day for tank owners and operators during the Missouri Waste Control Coalition Conference held at Lake of the Ozarks. Tank manufacturers, installation companies, equipment representatives, alternative fuel representatives and department and contract inspectors provided valuable equipment and installation information.
- To encourage even more communication between the regulated community and the department, the Tanks Compliance and Enforcement Unit established an Internet listserv. This listserv provides updates, determinations and proposed rule changes that impact the regulated tanks community. It also allows the regulated community to post questions or comments to the department.

- The Tanks Compliance and Enforcement Unit started the review and draft rule changes pertaining to the operational aspects of underground storage tanks. With the rapid development of new equipment in recent years, this effort is geared toward updating the underground storage tank regulations to better align with the industry of today and help prevent future releases.
- The department began inspecting every new tank installation in 2009. Not only has this effort been very successful in confirming and documenting the equipment installed, it ensures installations are conducted in accordance with manufacturer requirements and industry standards.
- In addition to compliance and operational issues, the Tanks Compliance and Enforcement Unit continue to use the expedited referral process previously approved by the Hazardous Waste Management Commission. Despite being short staffed, the dedicated efforts of those involved with this procedure have reduced the number of facilities without a documented financial responsibility mechanism.
- During this period, 10 facilities with financial responsibility violations were referred to the unit for enforcement action. Staff resolved 100 enforcement cases. Forty-five of these cases involved sites owned by Casey's Marketing Company. Three cases with operational or permanent closure violations were referred to the Attorney General's Office for enforcement action, one of which included a financial responsibility violation. In addition, three cases with only financial responsibility violations were referred to the Attorney General's Office.

Polychlorinated Biphenyl Inspector
The inspector conducted 25 compliance inspections at various types of facilities throughout the state. The reports are forwarded to the U.S. Environmental Protection Agency Region 7, which has authority for taking any necessary enforcement action regarding PCBs according to the Toxic Substances Control Act.

Hazardous Waste Transporter Inspector
The inspector conducted 38 commercial vehicle inspections, during which two vehicles were placed out of service. As part of the Commercial Vehicle Safety Association's protocol, the department sends the reports to the Missouri Highway Patrol. The transporter must certify to the Patrol the violations were corrected.

As of June 2010, there were 231 licensed hazardous waste transporters in Missouri.

Missouri Department of Transportation, Wentzville
Missouri Department of Transportation was selling property located at 1475 West Pearce Boulevard in Wentzville. Employees illegally dumped hazardous waste during a clean out before the real estate was sold. Sampling was performed to properly characterize the hazardous waste and to ensure the site had been adequately cleaned up. The penalty was set at $42,000, of which $21,000 is suspended contingent on there being no more incidents of illegal dumping of hazardous waste at Department of Transportation facilities for two years following the effective date of the Settlement Agreement. The remaining penalty of $21,000 shall be paid at one time. A payment of $3,692 for costs incurred by the Missouri Department of Natural Resources shall also be paid.

Bi-State Development Agency, St. Louis
Bi-State operates the city buses and Metrolink in both Missouri and Illinois. Several violations were cited at their repair facility during two on-site inspections. Bi-State failed to determine if their waste was hazardous, disposed of waste improperly, stored waste improperly and had several safety issues. Due to the current financial times, Bi-State agreed to pay a civil penalty of $29,056, half of which was suspended for five years if no serious violations are cited within that time period.

T&K Painting, Conway

T&K Painting is a commercial and residential painting company that generates waste from old paint and cleaning equipment. T&K failed to determine if their waste was hazardous even after being informed of this violation during a Compliance Assistance Visit. One facility failed to ship waste off-site for three years, ultimately shipping more than 4,000 pounds of waste. T&K finally agreed to a penalty of $22,400 where half was suspended for two years if no serious violations are cited within that time period.

New Listserv Postings

The Enforcement and Compliance Assistance Listserv for Hazardous Waste Generators discussed personnel protective equipment for employee safety and closed containers. The closed container listserv emphasized the reasoning behind closed container requirements. These requirements were developed using the following reasoning:

- Minimize emissions of volatiles.
- Help protect ignitable and reactive wastes from sources of ignition and reaction.
- Help prevent spills.
- Reduce the potential for mixing of incompatibles.
- Reduce the potential for direct contact between employees and hazardous waste.

Rosecrans Air National Guard, 139th Airlift Wing, St. Joseph

At 10:30 a.m. on Sunday May 23, personnel at the Rosecrans Air National Guard Base noticed tank number two at the fuels management area had a flange gasket failure in a 100,000 gallon aboveground storage tank. Base personnel contacted the Missouri Department of Natural Resources the next business day. There was approximately 50,000 gallons of jet fuel in the tank at the time of the incident. The tank, which had a secondary containment, allowed 8,098 gallons of jet (JP-8) fuel to release into its concrete dike area. Safety-Kleen contacted Hulcher Services and Haz-Mat Response to pump the fuel out of the dike area and to clean all surfaces. Total reclaimed fuel was 8,074 gallons leaving 24 gallons not able to be recovered, with some being lost to evaporation. This release and containment occurred over a period of approximately 36 hours.

There was no jet fuel released outside of the dike area. But with a combination of heavy rain and the base's high water table, about three feet below the surface, petroleum product appeared to be coming up through the seam at the bottom of the containment area. Federal Facilities Section staff, in coordination with the base, contacted Missouri Department of Natural Resources' Environmental Emergency Response staff and filed an incident report on June 3.

On June 6, Department of Natural Resources staff toured the site and provided information regarding the next steps towards assessing the release. Base personnel placed booms in the nearby ditches and closed the nearby storm drain to prevent potentially contaminated water from entering the waterways. Another preventative method included siphoning the water with a vac truck. The state has received initial sampling results taken from a nearby ditch that indicate the petroleum was not released into the environment. Federal Facilities Section staff will be continuing to work with base personnel to investigate the release and determine if any cleanup is warranted. Further sampling at the site is scheduled for September, once the water table has gone down and a more accurate assessment can be done.

Vac truck with aboveground storage tank that had the release of jet fuel.

As a precaution, water from the nearby ditch was pumped into the vac truck.

Department of Energy's Weldon Spring Site

On May 19, the Department of Energy hosted its annual public meeting at Weldon Spring. Approximately 22 people were present including state and federal agencies and members of the public. The meeting began with a presentation about the results of the annual site inspection, which occurred in fall 2009. Items of interest included continued observation of erosion features around the chemical plant site. These features do not currently or are expected to affect the integrity of the disposal cell. The Department of Energy continues to map and monitor these areas annually for changes and evidence of stabilization.

The next portion of the meeting covered the long-term surveillance and maintenance plan. It was noted the Department of Energy will conduct its fourth required five-year review this coming year. This review and documentation of whether the remedy remains protective is scheduled to be complete by September 2011. The next topic was institutional controls, where a question was asked regarding signage by the slough on Missouri Department of Conservation land. The Department of Energy recommended contacting the Missouri Department of Conservation about sign posting and stated the risk assessment for the slough showed there was no unacceptable risk to a recreational user. A summary presented environmental data including information about the uranium levels in groundwater.

The disposal cell leachate collection and removal system was another topic of discussion. Since leachate removal began in early 2000, the amount of leachate has decreased from about 300 gallons a day to less than 100 gallons a day. This is expected as the cell continues to limit the amount of water infiltration. This amount of leachate is expected to continue to decrease even further in the upcoming years.

The Weldon Spring Interpretive Center was the next topic of discussion. Since opening in 2002, the interpretive center recieved 76,462 visitors and provided outreach opportunities to 32,851 students and adults. The Interpretive Center display is in the process of being redesigned and the Department of Energy is scheduled to hold a grand reopening the last week of October 2010. Finally, the National Day of Remembrance Event, which was held in October 2009, was discussed. More than 400 former uranium workers, their families and various dignitaries attended this solemn event. The event was organized to remember and honor the nation's nuclear weapons workers.

Throughout the presentations, audience members asked questions pertaining to different issues at the site including current arsenic levels near the quarry, uranium sampling results as they relate to rainfall, and uranium levels in the Femme Osage Slough sediment.

Groundwater Monitoring System Inspections

Missouri's EPA hazardous waste program authorization is, in part, dependent on conducting periodic reviews of groundwater monitoring systems and programs at Missouri hazardous waste treatment, storage and disposal facilities. The reviews primarily focus on facilities with active and closed land disposal units, such as landfills and surface impoundments, where groundwater contamination is present or needs to be monitored to detect releases. The Permits Section prepares these reviews, which come in two forms: the Comprehensive Groundwater Monitoring Evaluation and the Operation and Maintenance Inspection Report. A Comprehensive Groundwater Monitoring Evaluation is an overarching evaluation of the facility's groundwater monitoring systems and programs. An Operation and Maintenance Inspection Report is more focused and examines groundwater sampling plans, procedures and monitoring well maintenance issues.

The Comprehensive Groundwater Monitoring Evaluation is usually the first inspection at any facility. The evaluation focuses on the design of the monitoring system by evaluating the well depths and locations and comparing them to site geology. This enables the reviewer to determine whether the systems are likely to properly monitor or detect contaminants moving in the groundwater. This approach is recommended in U.S. Environmental Protection Agency guidance and is necessary to ensure future data from a groundwater monitoring system will represent the actual groundwater quality. The well screens and well locations must be positioned so the monitored intervals include those most likely to be contaminated and most likely to carry contamination away from the source of the release(s). The section wants the monitoring system to encompass any groundwater contaminant plume in three dimensions, with clean or low-level wells at all the margins. This knowledge is essential to manage groundwater remediation and to manage potential exposures through the groundwater pathway to potential receptors.

Typical flush mount monitoring well.

Typical above ground monitoring well.

Facilities are re-inspected periodically and subsequent inspections are usually Operation and Maintenance inspections. These inspections focus on the procedures used to make field measurements and acquire groundwater samples along with an inspection of the monitoring wells for proper maintenance and physical condition. The Permits Section typically chooses to perform another Comprehensive Groundwater Monitoring Evaluation at a site only when additional site investigation is needed or has already been completed.

The Permits Section also performs Comprehensive Groundwater Monitoring Evaluations and Operation and Maintenance inspections at Missouri hazardous waste treatment, storage and disposal facilities that have not had land disposal activities. EPA agrees with the value of this approach since knowledge of any site monitoring system can benefit from these inspections and all facilities can present similar data quality and risk management concerns. A monitoring system may also be used to monitor a waste management unit that has not yet had a release. These systems are designed to detect any release to groundwater. The Comprehensive Groundwater Monitoring Evaluation and Operation and Maintenance Inspection for these sites focus on determining the groundwater monitoring system's ability to detect releases.

The Permits Section works with the Department's Division of Geology and Land Survey and Environmental Services Program to prepare inspection reports regarding the Comprehensive Groundwater Monitoring Evaluation and Operation and Maintenance Inspection report. The Division of Geology and Land Survey inspects the monitoring wells and critiques the acquisition of water level and well depth data. The Environmental Services Program critiques the sample methods and acquires split samples to compare and verify the results of samples collected and analyzed by the facility. The Permits Section has delegated the draft report preparation to Division of Geology and Land Survey in recent years, which has improved efficiency. The Permits Section evaluates additional regulatory issues.

The Permits Section sends a copy of the inspection report, along with a list of any identified deficiencies in the groundwater monitoring system, to the facility. The facility is required to respond to the deficiencies within a specified time period. The Permits Section performs the compliance follow-up.

Operation and Maintenance Inspections

The main objective of an Operation and Maintenance Inspection is to evaluate the technical and regulatory adequacy of the groundwater monitoring program implemented by a facility, as compared with the groundwater monitoring requirements contained in the applicable state and federal regulations. The applicable federal regulations are located in Code of Federal Regulations 40 CFR Part 264 Subpart F for permitted facilities and 40 CFR Part 265 Subpart F for interim status facilities. These federal regulations have been incorporated by reference into, and modified by, the Missouri Hazardous Waste Management Law.

The Operation and Maintenance Inspection evaluation concentrates on the facility's ability to operate and maintain the existing groundwater monitoring system and the facility's proficiency in collecting representative groundwater samples from the monitoring system. The Operation and Maintenance inspections are accomplished using a two-step process.

The first step is to review the various documents submitted to the department by the facility, including:

1. Any monitoring requirements contained in the facility's Missouri Hazardous Waste Management Facility Part I Permit, Corrective Action Order on Consent, Corrective Measures Implementation Plan, Groundwater Monitoring Plans, or other related document, and whether the facility is in compliance with these monitoring requirements.
2. Any activities relating to the groundwater monitoring system, inspections or enforcement actions occurring at the facility during the period covered by the Operation and Maintenance Inspection Report and to identify any subsequent issues or potential concerns with the operation or maintenance of the groundwater monitoring program.
3. Whether the facility's Sampling and Analysis Plan is sufficient according to the federal requirements, and whether the sampling personnel are following the plan in practice.

The second step in the Operation and Maintenance Inspection process is to perform an on-site inspection to:

1. Visually assess the structural integrity of the existing groundwater monitoring wells at the facility.
2. Determine if the owner/operator's sampling devices are in proper working order and whether the sampling procedures are adequate with respect to obtaining representative groundwater samples for analysis.
3. Evaluate whether individual monitoring wells and piezometers (wells used just for water elevation data) are yielding reliable groundwater samples and groundwater elevation data.

The Permits Section is responsible for preparing a report based on the results of the Operation and Maintenance Inspection document review and on-site inspections.

To accomplish the Operation and Maintenance Inspection objectives, each of the following topics are evaluated and presented as a section of the inspection report:

1. Field measurements of water quality parameters.
2. Piezometric measurement techniques.
3. The techniques used for the measurement, purging and sampling of monitoring wells.
4. The quality control and preservation procedures used for groundwater samples.
5. The Sampling and Analysis Plan included in the facility's current Quality Assurance Project Plan.
6. Well and equipment maintenance activities and condition.
7. The split sampling analytical results.
8. The content of the annual and semi-annual groundwater reports.

Problem well: Surface water has entered inside the surface mount and may enter the monitoring well and bias samples via dilution. Could also convey contaminants into the well from the surface.

Problem well: Can not tell if the well has a concrete well surface well seal or the condition of the seal, if present. May allow the entry of surface water and cause sample bias via dilution. Could also potentially allow contaminants into the well.

Comprehensive Monitoring Evaluation Inspections

The main objective of a Comprehensive Groundwater Monitoring Evaluation Inspection is to evaluate the technical and regulatory adequacy of the monitoring system as well as the monitoring program. Similar to Operation and Maintenance inspections, these elements are compared with the groundwater monitoring requirements contained in 40 CFR Part 264 Subpart F for permitted facilities and 40 CFR Part 265 Subpart F for interim status facilities.

Problem well: Concrete surface seal is cracked and decaying. The concrete surface seal provides a seal between the well and the boring it was placed into. This may allow the entry of surface water and cause sample bias through dilution. This might also allow contaminants to enter the well from the surface.

The monitoring system design evaluation involves determining the proper placement of groundwater monitoring wells based on the conceptual model of flow for a site. The conceptual model is based on the three dimensional configuration of the geologic units and the engineering characteristics such as their ability to conduct water (permeability) and their water holding capacity (porosity). Simply stated, the objective of a monitoring system should be to track contaminants as they are transported away from the source of the release to the subsurface. The criteria for evaluation is whether the wells yield samples representative of conditions within the aquifer and whether the wells are sited to best determine contaminant transport rate(s) and direction(s). If the system is monitoring an actual contaminant plume, which is usually the case, the inspection should determine whether the monitoring system documents the full extent of the plume in three dimensions.

The Comprehensive Groundwater Monitoring Evaluation Inspection report includes the following monitoring system review elements, in addition to all elements listed above for Operation and Maintenance Inspection.

1. Whether site-specific geological and hydrogeological characterization performed to date is sufficient to fully assess potential pathways, source areas and migration patterns for hazardous constituent(s) groundwater contamination.
2. Whether the existing monitoring wells have been constructed properly with respect to the subsurface hydrogeological conditions.
3. Whether the groundwater monitoring system is capable of determining the rate and extent of contaminant movement.
4. Whether the groundwater monitoring system is adequate to determine the source or sources of groundwater contamination in the vicinity of the facility.

Tannery Sludge Environmental Investigation

Department staff returned to the Tannery Sludge Environmental Investigation site in April 2010 to resample residential yards to address a quality control issue described below, conduct quality control sampling in the farm fields and collect background farm field samples. Results from these samples were received in May 2010. The results were statistically analyzed by department staff working with assistance from EPA's Office of Superfund Remediation and Technology Innovation.

Results from evaluation of the yard and farm field data show that even accounting for the various sources of sampling and analytical uncertainty, no samples exceeded their respective risk-based screening levels. Poor matrix spike recoveries were determined to be due to the soil's inherent inability to support the formation of hexavalent chromium rather than some failure of the analytical method.

All of the analytical data generated during the investigation is available on Web page created for the investigation, dnr.mo.gov/env/hwp/sw-sampling.htm. The project team conducted a phone conference in June 2010 to review the findings, and came to consensus based on the data collected, past application of tannery sludge to farm fields in northwest Missouri does not appear to have resulted in unacceptable risk to farmers or residents.

Hazardous Waste Program Staff are currently compiling the data into a Pre-CERCLIS Site Screening Report expected to be completed by the end of September 2010. The project team has discussed having a public meeting or availability session to share all testing results with northwest Missouri residents. As of the deadline for this report, a date for the meeting had not been set.
EPA and the Missouri Department of Health and Senior Services calculated a screening level of 86 ppm for hexavalent chromium in agricultural field soils and a screening level of 2 ppm for hexavalent chromium in residential yards. The Department of Health and Senior Services provided the department with a 0.3 parts per billion, or ppb, screening level for hexavalent chromium in drinking water.

None of the samples collected exceeded these risk-based screening levels.
A full summary of this investigation is online at dnr.mo.gov/env/hwp/sw-sampling.htm.

Quality Control

The initial farm fields' pilot study was done using an analytical method later found to suffer from positive interferences caused by the sample matrix. This was discovered during the October 2009 yard pilot study.

The Superfund section identified an alternative method that did not have these interferences. This alternative method was used for both the yard pilot and full investigation sampling events. The results from the August 2009 pilot study were falsely elevated due to matrix interferences. The section re-analyzed some of the archived farm field pilot study samples using the alternative method, and found the samples contained much less hexavalent chromium than originally reported.

Records of Decision

The Environmental Protection Agency is close to completing Records of Decision for five Missouri Superfund sites:

- Washington County, Potosi.
- Washington County, Old Mines.
- Washington County, Richwoods.
- Riverfront – New Haven, Franklin County.
- Big River Mine Tailings – St. Francois County.

A Record of Decision is a public document containing site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, scope and role of response action and the remedy selected for cleanup. You can search for Records of Decision in EPA's Record of Decision System, online at cfpub.epa.gov/superrods/index.cfm?fuseaction=main.search. This website contains full-text Records of Decision, abstracts, amendments and other related information.

Some Records of Decision involve institutional controls. The department is often the lead agency in maintaining, inspecting and enforcing these controls, and performs long-term operation and maintenance to assure the protectiveness of the remedy.

Additionally, formal concurrences of major decisions about these sites are required from department management.

Washington County Lead District Sites

This collection of sites is a former lead and barite mining area in southeast Missouri. Mining occurred for nearly 200 years, from the 1700s through the 1980s. There are three separate National Priorities List Sites in eastern Washington County: Potosi, Old Mines and Richwoods. All three of these sites were listed on the National Priorities List on March 19, 2008.

Within each of the three Superfund sites, there are different units known as operable units. Dividing a site into different operable units helps agencies focus on a specific issue and work on the most critical part first. For example, some of the sites have contaminated groundwater and contaminated soil. Different cleanup methods might be used for the water and the soil, and these may become two separate operable units.

Part of the April sampling in northwest Missouri included quality control sampling in farm fields and collecting background farm field samples.

The upcoming Records of Decision are for operable unit one at each site. This operable unit is primarily residential soil. The proposed remedy is to remove, replace and properly dispose of contaminated soil, provide high efficiency particulate air, or HEPA, vacuum cleaners and to implement institutional controls. A public comment period on the proposed cleanup plan is scheduled for July 20 through Aug. 27. Two public meetings are planned for July 20 and 21.

EPA has received a request to further extend the public comment period, which they will likely grant for at least an additional 30 days.

The three Records of Decision for the operable unit ones are expected to be finalized by Dec. 31. The remedial action conducted for these sites according to the Records of Decision are expected to be funded by EPA. Therefore, the state expects to be required to pay 10 percent of the remedial action costs and 100 percent of long-term operation and maintenance for the remedies. These sites, their size and estimated costs are below.

Potosi Area Site, Operable Unit one:
- 870 residential properties.
- Estimated cost $24,100,000 (State Share $2,410,000).

Old Mines Area Site, Operable Unit one:
- 396 residential properties.
- Estimated cost $11,200,000 (State Share $1,120,000).

Richwoods Area Site, Operable Unit one:
- 79 residential properties
- Estimated cost $2,440,000 (State Share $244,000)

Anticipated state operation and maintenance activities at these sites include:
- Inspect, repair and maintain Indian Creek soil repository.
- Monitor and enforce institutional controls.
- Cost of state-funded operations and maintenance.

Riverfront Superfund Site

This site was added to the National Priorities List on Dec. 1, 2000. The primary contaminant of concern is tetrachloroethylene in the soil and groundwater. The contamination's origin is thought to be the former Kellwood facility, which operated a tube mill from 1973 through 1985 and used tetrachloroethylene to remove oil from fabricated parts.

The Riverfront site consists of six operable units. Records of Decision have been completed for four of these operable units.

The current Record of Decision is for operable units two and six. There have been previous cleanup efforts at both of these operable units. These actions include removal of the soil source contamination, water wells were repaired and whole-house drinking water treatment units were provided for households with contaminated drinking water wells.

The proposed remedy for these two units includes additional treatment of source contamination, whole house water treatments, groundwater cleanup and long-term monitoring of domestic wells and groundwater plume and institutional controls.

The state involvement in this site includes response, operations and maintenance activities and possible National Resources Damages activities. Currently staff are reviewing documents related to the injured groundwater. Natural Resource Damages looks at resources and supporting habitats that may have been injured due to past releases or discharges of contaminants. The potentially responsible party, Kellwood, is expected to fund the remedial action and operation and maintenance for operable units two and six. Therefore, the state does not expect to incur remedial action cost share or long-term operation and maintenance obligations for the remedy.

The record of decision for this site is expected to be completed before June 30, 2011.

Big River Mine Tailings

Big River Mine Tailings is a former lead mining area in St. Francois County in the eastern Missouri "Old Lead Belt" that consists of three different operable units. Contaminants of concern are lead, cadmium and zinc. This site was added to the National Priorities List in 1992.

Previous cleanup actions for this site include the removal of contaminated residential soil and the stabilization of large tailings piles. The anticipated proposed remedy for the operable unit one residential soils is the removal, proper disposal and replacement of contaminated soil and the creation of institutional controls. The remedial action is expected to be primarily funded by the potentially responsible party, The Doe Run Company.

The state's involvement with this site includes response, operation and maintenance and might also include potential National Resource Damages issues. The record of decision for this site is anticipated to be finalized by March 31, 2011.

Tanks Section holds workshop at the Missouri Waste Coalition Conference

The Hazardous Waste Program's Tanks Section held a Tanks Workshop on June 22 as part of the Missouri Waste Coalition Conference at the Lodge of the Four Seasons Hotel at Lake of the Ozarks. This was the third annual workshop in conjunction with the Missouri Waste Coalition events. This conference was targeted toward environmental consultants who provide services to tank owners and operators and provided consultants with information and training regarding groundwater plume stability evaluation methodologies.

The workshop included departmental staff along with private consultants, private laboratories and others. The Tanks Section also hosted an information booth as part of the conference. The Environmental Protection Agency also participated in the conference as an exhibitor and in a support role.

Having a booth at the Missouri Waste Control Coalition Conference is a valuable outreach tool for the tanks section and provides an opportunity to meet stakeholders and discuss opportunities with interested parties.

Tank Fees Coming Due

Once again it is time for some facilities to pay underground storage tank, also known as UST, registration fees. The department mails invoices to facilities in August. The billing cycle for these facilities ends on Sept. 30, 2010. This will give underground storage tank owners and operators enough time to pay their fees for the next billing cycle, which begins Oct. 1, 2010. If a facility has no pending enforcement action, has obtained financial responsibility, met the 1998 upgrade and has no releases, in addition to having their underground storage tank fees paid, they will receive a Certificate of Registration before the current certificate expires on Sept. 30, 2010.

Owners who received an invoice for underground storage tanks that were sold or permanently closed (by removing the tank from the ground or filling it in place with a solid, inert material) must complete and submit an updated Petroleum Storage Tank Registration Form. This form is available online at www.dnr.mo.gov/env/hwp/tanks/ustregis.htm. In addition, owners and operators of underground storage tanks located in Missouri must submit an amended registration form whenever there is a change in ownership, a change in tank operation or a change in tank equipment.

Petroleum Storage Tanks FY10 Statistics

During fiscal year 2010, the department accomplished the following work related to petroleum storage tanks:

- Properly closed 472 tanks.
- Reviewed 181 closure reports.
- Approved 146 closure notices.
- Conducted four site investigations.
- Responded to 13 emergencies involving petroleum releases.
- Oversaw completion of 193 remediation sites.
- Issued 970 certificates of registration.

Missouri Department of Natural Resources - Hazardous Waste Program Tanks Section

A total of 107 new releases were reported during fiscal year 2010. Department staff were notified of 47 new installations at tank sites and received 46 new site registrations. Compliance and Enforcement Section staff resolved 212 cases involving violations. At the end of the 2010 fiscal year, there were 254 active enforcement cases. Financial responsibility compliance was at 98 percent. This number reflects insurance coverage from both Petroleum Storage Tank Insurance Fund, or PSTIF, and other private policies and statements. There were 62 sites that are state/federal exempt. This number does not include temporary closed tanks, which are not required to have financial responsibility. The department currently regulates 3,612 facilities with 9,546 active underground storage tanks.

Petroleum Storage Tanks Regulation March 2010

Staff Productivity	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	TOTAL
Documents received for review	236	234	208	261	189	216	210	190	239	257	210	180	2,630
Remediation documents processed	270	204	221	172	216	225	178	205	208	191	167	211	2,468
Closure reports processed	18	9	16	20	15	14	10	21	9	28	10	11	181
Closure notices approved	10	6	19	15	9	13	10	20	11	14	10	9	146
Tank installation notices received	1	7	4	2	4	3	4	3	6	2	2	9	47
New site registrations	4	8	2	3	3	6	4	6	3	2	4	1	46
Facility Data													
Total active and closed USTs	39,908	39,922	39,940	39,956	39,970	39,976	39,997	40,031	40,049	40,065	40,067	40,097	
Total permanently closed USTs	30,147	30,170	30,206	30,254	30,268	30,299	30,335	30,368	30,392	30,447	30,472	30,509	
USTs active and temporarily closed	9,702	9,692	9,672	9,646	9,642	9,635	9,623	9,621	9,609	9,574	9,554	9,546	
USTs in temporary closure	979	961	946	952	963	949	945	973	974	948	937	922	
Total hazardous substance USTs	393	395	395	395	395	395	395	395	395	395	395	394	
Facilities with active USTs	3,664	3,662	3,656	3,644	3,640	3,634	3,629	3,629	3,630	3,617	3,616	3,612	

Closures

Underground Storage Tanks	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	TOTAL	All Yrs
Closure Reports Reviewed	18	9	16	20	15	14	10	21	9	28	10	11	181	
Closure Notices Approved	10	6	19	15	9	13	10	20	11	14	10	9	146	
Number of Tanks Closed (Closure NFA)	53	24	52	46	27	25	38	21	47	60	44	35	472	

Cleanup

Underground Storage Tanks	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	TOTAL	All Yrs
UST release files opened this month	3	5	5	6	6	11	4	3	0	3	4	2	52	6,207
UST cleanups completed this month	18	13	17	10	10	8	10	7	16	17	11	8	145	5,292
Ongoing UST cleanups	994	988	972	968	960	959	964	961	944	930	919	914		
Aboveground Storage Tanks														
AST release files opened this month	1	2	1	2	0	0	1	0	1	1	0	2	11	439
AST cleanups completed this month	4	3	3	2	1	1	2	0	1	3	0	0	20	270
Ongoing AST cleanups	169	169	165	165	164	164	167	168	168	166	167	168		
Both UST and AST														
Total release files-both UST & AST	0	1	0	0	0	0	0	0	0	1	0	0	2	69
Cleanups completed-both UST & AST	0	0	1	0	0	1	0	0	2	0	0	0	4	41
Ongoing cleanups-both UST & AST	29	29	28	28	28	27	27	27	26	27	28	28		
Unknown Source														
Total release files-unknown source	2	1	5	3	1	5	3	17	2	2	0	1	42	296
Cleanups completed-unknown source	1	1	2	1	2	3	0	3	2	3	3	1	22	171
Ongoing cleanups-unknown source	141	145	150	151	147	143	134	150	157	156	125	125		
Documents Processed	270	204	221	172	216	225	178	205	208	191	167	211	2,468	
***Reopened Remediation Cases**	0	0	1	0	0	0	0	0	0	0	0	0	1	78

Effective December 2008 tanks with unknown substance will be included in total figures. Some measures are re-calculated each month for all previous months to reflect items added or edited after the end of the previous reporting period.